

CLAIMS

What is claimed is:

1. A method of making a sub-pixel barrier structure for a plasma display panel, the barrier structure having an array of intersecting barrier rib row and column members, the method comprising the steps of:
 - forming a layer of dielectric material over a substrate;
 - selecting a line width for each of the barrier rib row and column members which minimizes fired shrinkage distortions in the barrier structure;
 - patterning the barrier rib row and column members of the selected line widths in the layer; and
 - firing the substrate.
2. The method according to claim 1, wherein the line width of at least one of the barrier rib row members is different from the line width of at least one of the barrier rib column members.
3. The method according to claim 1, wherein the line width of at least one of the barrier rib row members at a peripheral location of the barrier structure is different from the line width of at least one of the barrier rib row members not at a peripheral location of the barrier structure.
4. The method according to claim 1, wherein the line width of at least one of the barrier rib column members at a peripheral location of the barrier structure is

different from the line width of at least one of the barrier rib column members not at a peripheral location of the barrier structure.

5. The method according to claim 1, wherein the array of intersecting barrier rib row and column members define one of rectangular and square sub-pixel spaces.

6. The method according to claim 1, wherein the array of intersecting barrier rib row and column members define hexagonal sub-pixel spaces.

7. The method according to claim 1, wherein the patterning step includes patterning supplementary barrier rib members adjacent at least one edge of the barrier structure.

8. The method according to claim 7, wherein the supplementary barrier rib members close open sub-pixels spaces disposed along the at least one edge of the barrier structure.

9. The method according to claim 7, wherein the selecting step includes selecting a line width for each of the supplementary barrier rib members, which minimizes fired shrinkage distortions at a periphery of the barrier structure.

10. The method according to claim 7, wherein at least one of the supplementary barrier rib members includes a supplementary barrier rib column member.
11. The method according to claim 10, wherein the at least supplementary barrier rib column member is disposed between adjacent barrier rib column members.
12. The method according to claim 7, wherein at least one of the supplementary barrier rib members includes a supplementary barrier rib row member.
13. The method according to claim 7, wherein at least one of the supplementary barrier rib members includes an elongated barrier rib member.
14. The method according to claim 7, wherein at least one of the supplementary barrier rib members includes an elongated barrier rib column member.
15. The method according to claim 7, wherein at least one of the supplementary barrier rib members includes an elongated barrier rib row member.

16. The method according to claim 7, wherein at least one of the supplementary barrier rib members is shorter in length than at least another one of the supplementary barrier rib members.

17. The method according to claim 7, wherein at least two of the supplementary barrier rib members are supplementary barrier rib column members and at least another two of the supplementary barrier rib members are supplementary barrier rib row members, the at least two supplementary barrier rib column members being shorter in length than the at least two supplementary barrier rib row members.

18. The method according to claim 17, wherein at least a further one of the supplementary barrier rib members includes an elongated barrier rib column member and at least a further one of the supplementary barrier rib members includes an elongated barrier rib row member, the at least two supplementary barrier rib column members being attached at ends thereof by the elongated barrier rib row member and the at least two supplementary barrier rib row members being attached at ends thereof by the elongated barrier rib column member.

19. The method according to claim 7, wherein at two of the supplementary barrier rib members are supplementary barrier rib column members and at least another two of the supplementary barrier rib members are supplementary barrier

rib row members, the at least two supplementary barrier rib row members being shorter in length than the at least two supplementary barrier rib column members.

20. The method according to claim 19, wherein at least a further one of the supplementary barrier rib members includes an elongated barrier rib column member and at least a further one of the supplementary barrier rib members includes an elongated barrier rib row member, the at least two supplementary barrier rib column members being attached at ends thereof by the elongated barrier rib row member and the at least two supplementary barrier rib row members being attached at ends thereof by the elongated barrier rib column member.

21. The method according to claim 7, wherein at least one of the supplementary barrier rib members is disposed between adjacent ones of the barrier rib column members.

22. The method according to claim 21, wherein the at least one of the supplementary barrier rib members disposed between adjacent ones of the barrier rib column members is longer than the barrier rib column members.

23. The method according to claim 7, wherein the supplementary barrier rib members close open sub-pixels spaces disposed along the at least one edge of the barrier structure except at least one corner thereof.

24. The method according to claim 7, wherein at least one of the supplementary barrier rib members provides an edge of the barrier structure with a straight profile.
25. The method according to claim 7, wherein at least two of the supplementary barrier rib members are elongated barrier rib members.
26. The method according to claim 25, wherein the elongated barrier rib members are connected to the barrier rib structure by at least two of the other supplementary barrier rib members.
27. The method according to claim 7, wherein at least one of the supplementary barrier rib members includes a curved member.
28. The method according to claim 27, wherein at least another one of the supplementary barrier rib members extends radially from the barrier rib structure to the curved member.
29. The method according to claim 7, wherein at least one of the supplementary barrier rib members includes a arrow head member.

30. The method according to claim 1, wherein the patterning step includes patterning at least one edge of the barrier structure with a reduced zig-zagging edge profile.
31. The method according to claim 7, wherein the line width of at least one of the supplementary barrier rib members is different from the line width of at least one of the barrier rib row members .
32. The method according to claim 7, wherein the line width of at least one of the supplementary barrier rib members is different from the line width of at least one of the barrier rib column members.
33. The method according to claim 7, wherein the line width of at least one of the supplementary barrier rib members is different from the line width of at least another one of the supplementary barrier rib members.
34. The method according to claim 7, wherein the supplementary barrier rib members provide at least one edge of the barrier structure with a straight profile.
35. A method of making a sub-pixel barrier structure for a plasma display panel, the barrier structure having an array of intersecting barrier rib row and column members, the method comprising the steps of:

forming a layer of dielectric material over a substrate;
patterning the barrier rib row and column members in the layer; and
patterning supplementary barrier rib members in the layer adjacent at least one edge of the barrier structure; and
firing the substrate.

36. The method according to claim 35, wherein the supplementary barrier rib members close open sub-pixels spaces disposed along the at least one edge of the barrier structure.

37. The method according to claim 35, wherein the selecting step includes selecting a line width for each of the supplementary barrier rib members, which minimizes fired shrinkage distortions at a periphery of the barrier structure.

38. The method according to claim 35, wherein at least one of the supplementary barrier rib members includes a supplementary barrier rib column member.

39. The method according to claim 38, wherein the at least supplementary barrier rib column member is disposed between adjacent barrier rib column members.

40. The method according to claim 35, wherein at least one of the supplementary barrier rib members includes a supplementary barrier rib row member.
41. The method according to claim 35, wherein at least one of the supplementary barrier rib members includes an elongated barrier rib member.
42. The method according to claim 35, wherein at least one of the supplementary barrier rib members includes an elongated barrier rib column member.
43. The method according to claim 35, wherein at least one of the supplementary barrier rib members includes an elongated barrier rib row member.
44. The method according to claim 35, wherein at least one of the supplementary barrier rib members is shorter in length than at least another one of the supplementary barrier rib members.
45. The method according to claim 35, wherein at least two of the supplementary barrier rib members are supplementary barrier rib column members and at least another two of the supplementary barrier rib members are supplementary barrier rib row members, the at least two supplementary barrier rib

column members being shorter in length than the at least two supplementary barrier rib row members.

46. The method according to claim 45, wherein at least a further one of the supplementary barrier rib members includes an elongated barrier rib column member and at least a further one of the supplementary barrier rib members includes an elongated barrier rib row member, the at least two supplementary barrier rib column members being attached at ends thereof by the elongated barrier rib row member and the at least two supplementary barrier rib row members being attached at ends thereof by the elongated barrier rib column member.

47. The method according to claim 35, wherein at two of the supplementary barrier rib members are supplementary barrier rib column members and at least another two of the supplementary barrier rib members are supplementary barrier rib row members, the at least two supplementary barrier rib row members being shorter in length than the at least two supplementary barrier rib column members.

48. The method according to claim 47, wherein at least a further one of the supplementary barrier rib members includes an elongated barrier rib column member and at least a further one of the supplementary barrier rib members includes an elongated barrier rib row member, the at least two supplementary barrier rib column members being attached at ends thereof by the elongated

barrier rib row member and the at least two supplementary barrier rib row members being attached at ends thereof by the elongated barrier rib column member.

49. The method according to claim 35, wherein at least one of the supplementary barrier rib members is disposed between adjacent ones of the barrier rib column members.

50. The method according to claim 49, wherein the at least one of the supplementary barrier rib members disposed between adjacent ones of the barrier rib column members is longer than the barrier rib column members.

51. The method according to claim 35, wherein the supplementary barrier rib members close open sub-pixels spaces disposed along the at least one edge of the barrier structure except at least one corner thereof.

52. The method according to claim 35, wherein at least one of the supplementary barrier rib members provides an edge of the barrier structure with a straight profile.

53. The method according to claim 35, wherein at least two of the supplementary barrier rib members are elongated barrier rib members.

54. The method according to claim 53, wherein the elongated barrier rib members are connected to the barrier rib structure by at least two of the other supplementary barrier rib members.
55. The method according to claim 35, wherein at least one of the supplementary barrier rib members includes a curved member.
56. The method according to claim 55, wherein at least another one of the supplementary barrier rib members extends radially from the barrier rib structure to the curved member.
57. The method according to claim 35, wherein at least one of the supplementary barrier rib members includes a arrow head member.
58. The method according to claim 35, wherein the patterning step includes patterning at least one edge of the barrier structure with a reduced zig-zagging edge profile.
59. The method according to claim 35, wherein the line width of at least one of the supplementary barrier rib members is different from the line width of at least another one of the supplementary barrier rib members.

60. The method according to claim 35, wherein the supplementary barrier rib members provide at least one edge of the barrier structure with a straight profile.
61. A sub-pixel barrier structure for a plasma display panel, the barrier structure comprising:
- a plurality of barrier rib row members, each of the row members having a line width; and
 - a plurality of barrier rib column members intersecting the barrier rib row members, each of the column members having a line width;
- wherein the line widths of the barrier rib row and column members are selected to minimize fired shrinkage distortions in the barrier structure.
62. A plasma display panel comprising:
- a sub-pixel barrier structure comprising:
 - a plurality of barrier rib row members, each of the row members having a line width; and
 - a plurality of barrier rib column members intersecting the barrier rib row members, each of the column members having a line width;
- wherein the line widths of the barrier rib row and column members are selected to minimize fired shrinkage distortions in the barrier structure.

63. A sub-pixel barrier structure for a plasma display panel, the barrier structure comprising:
- a plurality of barrier rib row members;
 - a plurality of barrier rib column members intersecting the barrier rib row members; and
 - supplementary barrier rib members adjacent at least one edge of the barrier structure for minimizing fired shrinkage distortions in the barrier structure.
64. A plasma display panel comprising:
- a sub-pixel barrier structure comprising:
 - a plurality of barrier rib row members;
 - a plurality of barrier rib column members intersecting the barrier rib row members; and
 - supplementary barrier rib members adjacent at least one edge of the barrier structure for minimizing fired shrinkage distortions in the barrier structure.